Applicant(s):Eitan Bachmat, Tao Kai Lam and Ruben Michel 99-202
Serial No.:   09/541,159
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In the Specification

Please amend the paragraph beginning at page 7, line 10 as follows:

In accordance with this invention, the seek time required for moving a disk head between first and second addresses includes a step of dividing the disk into a plurality of segments of a given [[sized]]size defined by first and second boundaries and establishing an array of seek times for seek operations between each pair of segments. The specified first and second addresses and seek times in the array are combined to obtain an actual seek time.

Please amend the paragraph beginning at page 9, line 3 as follows:

FIG. 6 is a flow diagram that depicts a process for obtaining an intervolume seek time;

FIG. 7 is a flow diagram that depicts a process for obtaining an intravolume seek time; and

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Please amend the paragraph beginning at page 9, line 22 as
follows:

Configuring physical disk drives into logical volumes or
analogous data blocks is well known in the art. By way of
example, the device controller 34A is shown with an associated
physical disk drive 31A divided into the mirrored logical
volumes M1-LVA, M1-LVB, M1-LVC and M1-LVD; the device
controller 34E controls the other physical disk drive 31E that
stores the mirrored logical volumes M2-LVA, M2-LVB, M2-LVC and
M2-LVD. It is also possible for logical volumes, such as the
LVE and LVF logical volumes on the physical disk [[31A]]31B,
and LVG and LVH logical volumes in the physical disk drive 31C
to have different capacities. As will become apparent, this
invention has particular use when a physical disk drive has
multiple logical volumes.

Please amend the paragraph beginning at page 16, line 3 as
follows:

FIG. 3 depicts a physical disk drive 200. For purposes of
discussion the physical disk drive 200 [[as]]is shown with a
capacity of 4 gigabytes(GB) and contains 3 logical volumes
designated logical volumes LV(1), LV(2) and LV(3) arranged in
bands of concentric cylinders. FIG. 3 depicts the extent and

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location of each of these logical volumes and their center line
addresses. Measured in terms of gigabytes from a starting
reference or 0 byte position on the outer track or cylinder of
the physical disk drive, the physical disk drive 200 has the
following characteristics:

Please amend the paragraph beginning at page 22, line 16 as
follows:

    Step 226 utilizes the resulting number of seeks obtained
from Equation (2) and the characteristic seek time from
equation (9) to generate the total time for seek operations
with the logical volume pair. That is, for a specified logical
volume pair i,j, the seek time, seek time(i,j) is:

$$Seek\ time\ (i,j)\frac{A_i A_j}{A} = t_{i,j} \qquad (11)$$

Thus steps_220 and 226 provide a total seek time over the
analysis interval for a logical volume pair (i,j).

Please amend the paragraph beginning at page 24, line 16 as
follows:

    FIG. 7 depicts a procedure 230 for estimating the seek
time for intravolume seek operations in a selected logical
volume i.__For purposes of explanation and understanding,

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assume that the LV(2) logical volume shown in FIG. 3 has been

selected.

Please amend the paragraph beginning at page 26, line 16 as

follows:

As will become evident, it is only necessary to analyze

the [intravolume seek times]intervolume seek times for each

logical volume pair. Any number of procedures can be used to

avoid duplication. In one approach depicted in FIG. 8, the

logical volumes on a physical disk drive are ordered by their

position on the drive. For example, the order of the logical

volumes in FIG. 3 would be LV1, LV2, LV3. In this particular

case the sequence of names corresponds to the order, but the

logical volume names and the sequence with which they appear

are arbitrary.

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